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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,464	09/25/2003	Ju-Yup Kim	030681-571	4566

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EXAMINER

WEINER, LAURA S

ART UNIT PAPER NUMBER

1745

DATE MAILED: 10/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/669,464

Applicant(s)

KIM ET AL.

Examiner

Laura S. Weiner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 9-15, 17, 18, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 9-03; 6-05; 8-06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species A, Formula 3, specifically a dimethyl malonate in the reply filed on 9-15-06 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 4 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9-15-06.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5-6, 9-11, 13, 15, 17-18, 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 54-75534, (abstract) or JP 54-75535 (abstract).

JP 54-75534 or JP 54-75535 teaches a battery comprising a positive electrode, a negative electrode such as Li and an electrolyte comprising LiClO₄, propylene carbonate and dimethyl malonate or diethyl malonate.

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5. Claims 1-3, 5-6, 9-15, 17-18, 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsui et al. (JP 08-096849, abstract and translation).

Matsui et al. teaches a nonaqueous electrolytic secondary battery comprising a positive electrode, a negative electrode using an alkaline metal as active material and an electrolyte that contains an aliphatic saturated dicarboxylic acid ester expressed as formula 1 *[therefore teaching dimethyl malonate, diethyl malonate, etc.]* and the main solvent is preferably 60 vol% of at least one of ethylene carbonate, propylene carbonate and diethyl carbonate *[teaching that the organic solvent is a carbonate]*. Matsui et al. teaches on page 2, [0002], that the salts can be LiClO₄, LiBF₄, LiAsF₆, LiPF₆, LiCF₂SO₃, etc. Matsui et al. teaches in the translation on page 3, [0010], that the cell comprised EC and PC as the main solvent and that 5 vol of dimethyl malonate is used. Matsui et al. teaches on page 2 of the translation that 1 mol/l of LiClO₃ was used and that the positive electrode comprises LiMn₂O₄ and a separator was present.

6. Claims 1-3, 5-6, 9-15, 17-18, 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiga et al. (JP 2000-223153, abstract and translation).

Shiga et al. teaches a secondary battery comprising a lithium manganese oxide positive electrode, a negative electrode and an electrolyte comprising 0.5-3.0 vol% diethyl malonate or di-n-propyl malonate and 97-99.5% of another solvent such as EC, DMC, DEC, lactone or a sulfolane is used. Shiga et al. teaches on page 3 of the

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translation that 1 mol/L of LiBF₄ was used and that the positive electrode comprises Li_{1.10}Mn_{1.90}O₄, a graphite anode and a separator.

7. Claims 1, 3, 5-6, 9-13, 15, 17-18, 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee-Doo et al. (JP 11-135148, abstract and translation).

Lee Doo et al. teaches a battery comprising an electrolyte comprising a mixed solvent of lithium salt containing a high-dielectric solvent, a low viscosity solvent and a specific compound such as dimethyl malonate, diethyl malonate, etc. The high-dielectric solvent is EC, PC, etc. and the low viscosity solvent is dimethyl carbonate, diethyl carbonate, etc. Lee-Doo et al. teaches in the translation on page 3, [0023], that the low viscosity solvent can be DMC, DEC, EMC, dimethoxyethane and tetrahydrofuran. Lee-Doo et al. teaches in the translation on page 3, [0038], that the anode comprises lithium and the cathode comprises the oxide or sulfide.

8. Claims 1-3, 5-6, 9-15, 17-18, 21-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Shizuka et al. (JP 2002-367673, abstract and translation).

Shizuka et al. teaches in the translation a battery comprising a positive electrode comprising LiCoO₂, LiNiO₂ etc. and an electrolyte comprising 0.5-1.5 mols/l of LiBF₄, LiPF₆, etc., 0.1-5% by weight of a dimethyl malonate, a diethyl malonate, dibutyl malonate, etc. and a solvent from the group consisting of carbonate, ether or lactone. The carbonate can be PC, EC, DMC, DEC, etc. and dimethoxyethane and dimethoxyethane can be used.

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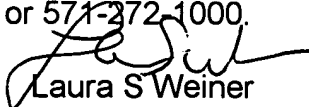
Allowable Subject Matter

9. Claims 7-8, 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Laura S. Weiner
Primary Examiner
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October 12, 2006